

C. Liao  
U.S. Serial No. 09/929,765  
Page 5 of 7

### REMARKS

Claims 6, 8, 11, 13, and 14 are pending in the application. Claims 6, 8, 11, and 14 have been amended by the present amendment. The amendments are fully supported by the specification as originally filed.

As amended, claims 6 and 11 each recite a ball grid array package in which bond fingers are electrically connected to bond pads on a semiconductor chip by a plurality of bonding wires, and a top position of an electrically-conductive bridge is lower in height than a top position of the bonding wires used to electrically connect the bond fingers to the bond pads. For example, referring to FIG. 5, bonding wires 50A-50D electrically connect bond fingers 60A-60D to bond pads 30A-30D on the semiconductor chip 20. As shown in FIGS. 6 and 7, each electrically-conductive bridge 90' and 90" has a top position that is lower in height than a top position of the bonding wires 50A-50D.

With reference to FIGS. 5 to 7, the electrically conductive bridge 90 can be a bonding wires 90' or a chip resistor", each of which spans in an overhead manner across a continuous electrically-conductive trace 70A that is interposed between a bond finger 60B and an electrically-conductive via 80A, such that the bond finger 60B is electrically connected to the via 80A by the electrically-conductive bridge 90 (see, e.g., specification at page 7, first paragraph). As shown in FIGS. 6 and 7, a top position of the electrically-conductive bridge 90', 90" is lower in height than a top position of the bonding wire 50B.

Applicant's claimed invention can yield significant benefits. By using an electrically-conductive bridge, electrical connection is made between the bond finger 60B and the via 80A, thereby overcoming the problem described with reference to FIG. 3 (PRIOR ART), as explained on page 3, lines 2-3 of the specification. Moreover, use of an electrically-conductive bridge is simpler and more cost-effective than the multi-layer substrate described with reference to FIG. 4 (PRIOR ART).

C. Liao  
U.S. Serial No. 09/929,765  
Page 6 of 7

Claim 6 was rejected under 35 USC 103(a) as being unpatentable over "Applicant's Prior Art Figures 3 and 4 (APAF)" in view of Japanese Publication 60-157238 to "Takahama". Claim 8 was rejected under 35 USC 103(a) as being unpatentable over APAF in view of Takahama, and further in view of U.S. Patent 3,560,256 to Abrams. Claims 11 and 13 were rejected under 35 USC 103(a) as being unpatentable over APAF in view of Takahama and Abrams. These rejections are respectfully traversed.

As indicated in the Office Action of 02/24/2005, prior art FIGS. 3 and 4 do not teach or suggest the electrically-conductive bridge recited in independent claims 6 and 11.

Takahama was cited for allegedly teaching "a conductive bridge (8) in the form of a bond wire spanning in an overhead manner across the traces" (see Office Action, page 3, lines 1-2).

As shown in FIG. 3 of Takahama, thick Al wires 8 are used for electrical connection between the semiconductor elements 4 and 5 (see abstract of Takahama). There is no teaching or suggestion in Takahama of a top position of an electrically-conductive bridge that is lower in height than a top position of bonding wires used to electrically connect bond fingers to bond pads on a semiconductor chip.

Therefore, even if Takahama were somehow combined with "APAF", the proposed combination still would not teach or suggest the Applicant's invention as recited in independent claim 6.

Regarding the rejection of independent claim 11, the Abrams reference was further cited for allegedly teaching the "electrically conductive bridge 26 spans in an overhead manner across interposing traces (22c & 22d)," where the "bridge/crossover is made of gold wires or includes a resistor" (see Office Action at page 5).

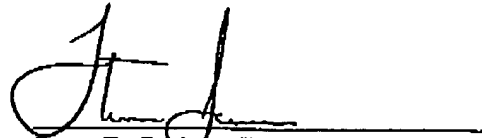
C. Liao  
U.S. Serial No. 09/929,765  
Page 7 of 7

However, there is no teaching or suggestion in Abrams of a top position of an electrically-conductive bridge that is lower in height than a top position of bonding wires used to electrically connect bond fingers to bond pads on a semiconductor chip.

Therefore, even if Abrams were somehow combined with "APAF" in view of Takahama, the proposed combination still would not teach or suggest the Applicant's invention as recited in independent claim 11.

It is believed the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,



Peter F. Corless (Reg. No. 33,860)  
Steven M. Jensen (Reg. No. 42,693)  
EDWARDS & ANGELL, LLP  
P.O. Box 55874  
Boston, MA 02205

Date: May 24, 2005

Phone: (617) 439-4444

Customer No. 21874